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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,926	07/25/2003	Eberhard Wizgall	10739.18.93.1	5402
22859	7590	05/25/2004	EXAMINER	
INTELLECTUAL PROPERTY GROUP			TRIEU, THAI BA	
FREDRIKSON & BYRON, P.A.			ART UNIT	PAPER NUMBER
4000 PILLSBURY CENTER			3748	
200 SOUTH SIXTH STREET			DATE MAILED: 05/25/2004	
MINNEAPOLIS, MN 55402				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/626,926	WIZGALL ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Thai-Ba Trieu	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

#### A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is **FINAL**.                                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-5,7,9-14 and 17-20 is/are rejected.
- 7) Claim(s) 6,8,15 and 16 is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. ____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____ .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: ____ .

***Specification***

1. The disclosure is objected to because of the following informalities:

- On Page 5, lines 9 and 11, “***an exhaust manifold 12, 14***” should be replaced by -- ***single bend/bend 12 of a/the exhaust manifold 14*** -- (for consistency of the whole specification and claims).

Not that applicants should select one term to disclose through out the specification and claims to maintain the consistency of the instant application.

- For the element “22”, applicants should select only one of the following terms, either “***cavity 22***” (See Page 5, line 12; and claims 2 and 11, line 2), or “***hollow space 22***” (See Page 6, lines 15, 17, and 22) (For consistency of the whole specification.

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o).

Correction of the following is required:

- The recitations of “***inner wall***”, and “***outer wall***” (See Claims 2 and 11, lines 2-3; and Claims 3 and 12, line 1) need to be incorporated with the specification.
- The recitations of “***first location***”, and “***second location***” (See Claims 7 and 19, lines 4-5; Claims 8 and 16, lines 1-2; and Claim 10, lines 11-12) need to be incorporated with the specification.

- The recitations of "***hull***", "***deck positioned on the hull***", and "***a propulsion device***" (See Claim 18, lines 2-4) need to be incorporated with the specification.

### ***Claim Objections***

Claims 4, 7, 10, 13 and 19 are objected to because of the following informalities:

- In claims 4 and 13, line 1, "***input***" before "***for each bend***" should be replaced by – ***inlet*** – (for consistency with the specification).
- In claims 7 and 19, line 4, and claim 10, line11, "***cooing***" should be replaced by – ***cooling*** – (for correcting typo error).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Meiners (Patent Number 4,068,612).***

Meiners discloses an engine comprising:

a turbine casing (41) (See Figures 3-4);  
an exhaust manifold (14, 15) coupled to the turbine casing (41) wherein the turbine casing and the exhaust manifold are formed as one piece (See Figures 1-2; Column 3, lines 1-30);

a cooling structure integrated in the turbine casing (41) and the exhaust manifold (14, 15) wherein the cooling structure allows a coolant to circulate around portions of the turbine casing (41) and the exhaust manifold (14, 15) (See Figure 1-3);

wherein the cooling structure comprises:

an inner wall (54);

an outer wall (52) spaced from the inner wall to define a cavity (50) there between wherein the coolant circulates in the cavity (50) (See Figure 3, Column 3, lines 63-68, and Column 4, lines 1-6);

wherein the outer wall (52) of the cooling structure forms at least a portion of the turbine casing (41) and the exhaust manifold (14, 15) (See Figures 1-3);

wherein the cooling structure has an input (via 60) for each bend of the exhaust manifold (See Figure 3);

wherein the cooling structure has an outlet (62) positioned near an exhaust gas outlet of the turbine casing (41) (See Figure 5, Column 4, lines 13-27).

***Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Merkle et al. (Patent Number 3,948,052).***

Merkle discloses an engine comprising:

a turbine casing (2) (See Figure 1);  
an exhaust manifold (12, 13, 14, 15, and 16) coupled to the turbine casing (2) wherein the turbine casing and the exhaust manifold are formed as one piece (See Figure 1);  
a cooling structure integrated in the turbine casing (2) and the exhaust manifold (12, 13, 14, 15, and 16) wherein the cooling structure allows a coolant to circulate around portions of the turbine casing (2) and the exhaust manifold (12, 13, 14, 15, 16) (See Figure 1-3);  
wherein the cooling structure comprises:  
an inner wall (28, 31);  
an outer wall (20) spaced from the inner wall to define a cavity (34) there between wherein the coolant circulates in the cavity (34) (See Figure 1)  
wherein the outer wall (20) of the cooling structure forms at least a portion of the turbine casing (2) and the exhaust manifold (12, 13, 14, 15, and 16) (See Figures 1-3);  
and  
wherein the cooling structure has an input (via 17, 18) for each bend of the exhaust manifold (See Figure 1).

***Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by Hasegawa et al. (Patent Number 4,608,827).***

Hasegawa discloses an engine cooling system comprising a first cooling circuit for cooling an engine block (via 4, 2, 6); and

a second cooling circuit (via 11) for cooling a turbine bearing housing, the second cooling circuit having an input coupled to the first cooling circuit at a first location (at the point where line 11 is coupled to line 6), and an output coupled to the first cooling circuit at a second location (at a point where the line 5 is coupled to line 7) (See Figures 1-2).

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meiners (Patent Number 4,068,612), in view of Devers et al. (Patent Number 3,928,963).***

Meiners discloses the invention as recited above; however, Meiners fails to disclose the turbine casing being made of a metal selected from the group consisting of a low-alloy steel, a gray cast iron and aluminum.

Devers teaches that it is conventional in the turbine art, to utilize the turbine casing being made of a metal selected from the group consisting of a low-alloy steel, a gray cast iron and aluminum (See Column 1, lines 7-11, and Column 5, lines 17-33).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the turbine casing being made of a metal selected from the group consisting of a low-alloy steel, a gray cast iron and aluminum, as taught by Devers, to improve the efficiency of the cooling system of the Meiners device.

***Claims 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meiners (Patent Number 4,068,612), in view of Hasegawa et al. (Patent Number 4,608,827).***

Meiners discloses an engine comprising:

    a turbine casing (41) (See Figures 3-4);  
    an exhaust manifold (14, 15) coupled to the turbine casing (41) wherein the turbine casing and the exhaust manifold are formed as one piece (See Figures 1-2; Column 3, lines 1-30);

    a cooling structure integrated in the turbine casing (41) and the exhaust manifold (14, 15) wherein the cooling structure allows a coolant to circulate around portions of the turbine casing (41) and the exhaust manifold (14, 15) (See Figure 1-3);

    wherein the cooling structure comprises:

        an inner wall (54);

an outer wall (52) spaced from the inner wall to define a cavity (50) there between wherein the coolant circulates in the cavity (50) (See Figure 3, Column 3, lines 63-68, and Column 4, lines 1-6);

wherein the outer wall (52) of the cooling structure forms at least a portion of the turbine casing (41) and the exhaust manifold (14, 15) (See Figures 1-3);

wherein the cooling structure has an input (via 60) for each bend of the exhaust manifold (See Figure 3);

wherein the cooling structure has an outlet (62) positioned near an exhaust gas outlet of the turbine casing (41) (See Figure 5, Column 4, lines 13-27).

However, Meiners fails to disclose a first and a second cooling circuit.

Hasegawa teaches that it is conventional in the cooling system art for a turbocharged internal combustion engine, to utilize an engine cooling system comprising a first cooling circuit for cooling an engine block (via 4, 2, 6); and

a second cooling circuit (via 11) for cooling a turbine bearing housing, the second cooling circuit having an input coupled to the first cooling circuit at a first location (at the point where line 11 is coupled to line 6), and an output coupled to the first cooling circuit at a second location (at a point where the line 5 is coupled to line 7) (See Figures 1-2).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the first and a second cooling circuit, as taught by Hasegawa, to improve the efficiency of the Meiners device.

***Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meiners (Patent Number 4,068,612), in view of Hasegawa et al. (Patent Number 4,608,827), and further in view of Devers et al. (Patent Number 3,928,963).***

The modified Meiners device discloses the invention as recited above; however, fails to disclose the turbine casing being made of a metal selected from the group consisting of a low-alloy steel, a gray cast iron and aluminum.

Devers teaches that it is conventional in the turbine art, to utilize the turbine casing being made of a metal selected from the group consisting of a low-alloy steel, a gray cast iron and aluminum (See Column 1, lines 7-11, and Column 5, lines 17-33).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the turbine casing being made of a metal selected from the group consisting of a low-alloy steel, a gray cast iron and aluminum, as taught by Devers, to improve the efficiency of the cooling system of the modified Meiners device.

***Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gokan et al. (Patent Number 6,659089 B2), in view of Meiners (Patent Number 4,068,612).***

Gokan discloses a personal watercraft comprising:

- a hull (14) (See Figure 1) ;
- a deck positioned on the hull (15) (See Figure 1) ;
- a propulsion device (30) ( See Figure 1) ;

an engine for driving the propulsion device, the engine comprising:  
a turbine casing (140 T) (See Figures 6-7); and  
an exhaust manifold (24o) coupled to the turbine casing (140 T).

However, Gokan fails to disclose the turbine casing and the exhaust manifold formed as one piece; and a cooling structure integrated in the turbine casing and the exhaust manifold.

Meiners teaches that it is conventional in the cooling system art for a turbocharged internal combustion engine, to utilize the turbine casing and the exhaust manifold are formed as one piece (See Figure 1); and a cooling structure integrated in the turbine casing (2) and the exhaust manifold (12, 13, 14, 15, and 16) wherein the cooling structure allows a coolant to circulate around portions of the turbine casing (2) and the exhaust manifold (12, 13, 14, 15, 16) (See Figure 1-3).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the turbine casing and the exhaust manifold formed as one piece; and a cooling structure integrated in the turbine casing and the exhaust manifold, as taught by Meiners, to improve the efficiency of the Gokan device.

***Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gokan et al. (Patent Number 6,659089 B2), in view of Meiners (Patent Number 4,068,612) in view of Hasegawa et al. (Patent Number 4,608,827).***

The modified Gokan device discloses the invention as recited above; however, fails to disclose a first and a second circuit cooling.

Hasegawa teaches that it is conventional in the cooling system art for a turbocharged internal combustion engine, to utilize an engine cooling system comprising a first cooling circuit for cooling an engine block (via 4, 2, 6); and

a second cooling circuit (via 11) for cooling a turbine bearing housing, the second cooling circuit having an input coupled to the first cooling circuit at a first location (at the point where line 11 is coupled to line 6), and an output coupled to the first cooling circuit at a second location (at a point where the line 5 is coupled to line 7) (See Figures 1-2).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the first and a second cooling circuit, as taught by Hasegawa, to improve the efficiency of the Meiners device.

***Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gokan et al. (Patent Number 6,659,089 B2), in view of Meiners (Patent Number 4,068,612), and further in view of Devers et al. (Patent Number 3,928,963).***

The modified Gokan device discloses the invention as recited above; however, fails to disclose the turbine casing being made of a metal selected from the group consisting of a low-alloy steel, a gray cast iron and aluminum.

Devers teaches that it is conventional in the turbine art, to utilize the turbine casing being made of a metal selected from the group consisting of a low-alloy steel, a gray cast iron and aluminum (See Column 1, lines 7-11, and Column 5, lines 17-33).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the turbine casing being made of a metal selected

from the group consisting of a low-alloy steel, a gray cast iron and aluminum, as taught by Devers, to improve the efficiency of the cooling system of the modified Gokan device.

***Allowable Subject Matter***

**Claims 6, 8 and 15-16** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Johnston et al. (US Patent Number 4,704,075) discloses a turbocharger water-cooled bearing housing.
- Gokan et al. (US Patent Number 6,676,464 B2) discloses a supercharger cooling structure for a small watercraft.
- Ruetz (US Patent Number 5,463,867) discloses a supercharged internal combustion engine exhaust system.
- Deutschmann (US Patent Number 5,337,559) discloses a supercharged multi-cylinder internal combustion engine interior exhaust pipe.
- Matsuura et al. (US Patent Number 5,020,319) discloses a hollow heat resisting body assembly for internal combustion engine having a turbocharger casing made of aluminum alloy.

- Sarra (US Patent Number 3,541,786) discloses an inboard marine engine cooling system.
- Ebina et al. (Patent Number JP 56163091 A) disclose a welding repair method of low alloy cast steel turbine casing.
- Osawa (Patent Number JP 2003221639 A) discloses a turbine being made of globular graphite cast iron.
- Honda et al. (Patent Number JP 06049616 A) discloses a turbine being made of spheroidal graphite cast iron.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (703) 308-6450. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (703) 308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Application/Control Number: 10/626,926  
Art Unit: 3748

Page 14

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



TTB  
May 15, 2004

Thai-Ba Trieu  
Patent Examiner  
Art Unit 3748